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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/526,259

03/01/2005

Werner Arts

P1962

7054

24739

7590

06/30/2008

CENTRAL COAST PATENT AGENCY, INC  
3 HANGAR WAY SUITE D  
WATSONVILLE, CA 95076

EXAMINER

WALLENHORST, MAUREEN

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

06/30/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/526,259	<b>Applicant(s)</b> ARTS ET AL.	
	<b>Examiner</b> Maureen M. Wallenhorst	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: The title of the invention in the declaration is not the same as the title of the invention given on the first page of the specification. In addition, the declaration fails to claim priority to PCT/EP03/09702 under 35 USC 120.

3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

On lines 2-3 of claim 2, the phrase “the lower end” lacks antecedent basis.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1,439,469 in view of Arts et al (EP 1,055,927).

GB 1,439,469 teaches of a method for the pyrolytic analysis of aqueous liquids in order to determine the total oxygen demand (TOD) of the liquids. The method comprises the steps of injecting into a combustion furnace a sample of an aqueous liquid, such as sewage waste water, together with a carrier gas, and heating the sample in the furnace to a temperature from 1000 to 1200<sup>0</sup>C in the absence of a catalyst. Total oxygen demand is measured by determining the decrease in free oxygen content of the carrier gas during combustion of the sample, and comparing the concentration of free oxygen in the carrier gas both before and after the combustion process. In contrast to conventional furnaces, the combustion furnace taught by the GB patent works in the absence of a catalyst. The high temperature range at which the sample is combusted in the furnace (i.e. 1000-1200<sup>0</sup>C) ensures that all of the hydrocarbon compounds are completely burnt to form carbon dioxide. See lines 84-90 on page 1, lines 1-26 and 117-122 on page 2, and lines 20-37 on page 3 of GB 1,439,469. The GB patent fails to teach that the combustion chamber is vertically oriented, and that salts in the aqueous sample are removed at the lower end of the combustion chamber.

Arts et al (EP 1,055,927) teach of a method and device for the decomposition of an aqueous liquid sample in order to determine the total content of organic carbon (TOC) therein. The method comprises the steps of passing a sample of aqueous waste water into a combustion chamber that is vertically oriented, and heating the sample to a temperature between 1000 and 1200°C without the presence of a catalyst. Arts et al also teach that any salt components in the sample are removed at the lower end of the vertically oriented combustion chamber. See the abstract, English language translation and Figure 1 of Arts et al.

Based upon a combination of GB 1,439,469 and Arts et al, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to vertically orient the combustion chamber taught by GB 1,439,469 since Arts et al teach that such a configuration is normally used for the combustion of an aqueous waste water sample, and facilitates the passage of the products of combustion to a detector. It also would have been obvious to one of ordinary skill in the art to remove any salts in the aqueous sample combusted using the method and apparatus taught by GB 1,439,469 at the lower end of the combustion chamber since Arts et al teach that it is advantageous to remove contaminating salts in a combusted aqueous waste water sample so as to achieve accurate detection results.

8. Applicant's arguments filed March 5, 2008 have been fully considered but they are not persuasive.

The objection to the declaration made in the last Office action mailed on September 5, 2007 has been maintained since a new declaration in compliance with 37 CFR 1.67(a) was not received with the response dated March 5, 2008. Most of the grounds of rejection of the claims

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under 35 USC 112, second paragraph made in the last Office action have been withdrawn with the exception of claim 2, as noted above.

Applicants argue the rejection of the claims under 35 USC 103 as being obvious over GB 1,439,469 in view of Arts et al (EP 1,055,927) by stating that the present claims recite a process of determining the oxygen demand, TOD, of an aqueous solution, whereas EP 1,055,927 teaches a method for determining the total content of organic carbon, TOC, in a solution. Applicants argue that one of skill in the art would not consider a method for determining organic carbon as a method for determining TOD, and therefore, there is no motivation to perform TOD in a vertical chamber. In response to this argument, it is noted that both TOD and TOC analyses are routinely performed in a combustion furnace, and the secondary reference to Arts et al (EP 1,055,927) teaches the advantages of using a vertically-oriented furnace so as to facilitate the passage of combustion products to a detector and the collection of resulting salts at a lower end of the furnace. The primary reference to GB 1,439,469 teaches of the analysis of an aqueous solution for total oxygen demand, and the secondary reference to Arts et al is used solely for providing evidence that vertical furnaces are extremely common in the field of wastewater analysis performed using a combustion reaction chamber, whether the combustion of the wastewater be for the purpose of determining TOD or TOC. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to vertically orient the combustion chamber taught by GB 1,439,469 since Arts et al teach that such a configuration is normally used for the combustion of an aqueous waste water sample, and facilitates the passage of the products of combustion to a detector.

Applicants also argue that the solution in the horizontal chamber of GB 1,439,469 must pass through a heating zone several times to combust the solution, and therefore, the heating process of GB 1,439,469 could not be performed in a vertical chamber, as claimed. In response to this argument, it is noted that if the apparatus taught by GB 1,439,469 were equipped with conventional pumping equipment, a solution could easily be repeatedly passed through a vertically oriented combustion furnace, and the provision of such conventional pumping equipment on a vertical chamber is routine in the art.

For the above reasons, Applicants' arguments are not found persuasive.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen M. Wallenhorst whose telephone number is 571-272-1266. The examiner can normally be reached on Monday-Thursday from 6:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden, can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maureen M. Wallenhorst  
Primary Examiner  
Art Unit 1797

mmw

June 23, 2008

/Maureen M. Wallenhorst/

Primary Examiner, Art Unit 1797